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Neurologic Illness Associated with Eating Florida Pufferfish, 2002

Since January 1, 2002, human illness after eating pufferfish caught in waters near Titusville, Florida, has been reported (Figure 1). The illnesses were manifested by neurologic symptoms consistent with exposure to paralytic shellfish toxins. Laboratory analysis in early April confirmed the presence of saxitoxin in uneaten pufferfish. This report presents selected case examples and summarizes all cases reported to the Toxic Exposure Surveillance System of the American Association of Poison Control Centers (TESS).

Case Reports

Florida. On January 2, the poison control center in Tampa, Florida, received a call from an emergency department (ED) physician about a man aged 34 years who had numbness and tingling of his hands. On January 1, he had experienced vomiting and diarrhea after eating approximately eight mouthfuls of pufferfish recreationally caught in waters near Titusville. The man was admitted to the hospital for observation and was administered intravenous fluids. His symptoms gradually resolved, and he was released 2 days after admission.

Virginia. On March 12, a man aged 50 years and his son aged 24 years returned from a fishing trip to Titusville, where they had caught several pufferfish. Approximately 3 hours after they had cooked and eaten the fish, they contacted the Richmond poison control center complaining of numbness and tingling of the lips and tongue. The two men decided to monitor their symptoms at home. The younger man's symptoms were limited to oral numbness and resolved in 3–4 days. The older man's symptoms progressed during the evening to include numbness and tingling in the face, neck, and shoulders; the next day, he still had numbness in his mouth. The symptoms reportedly resolved over 2 weeks.

New Jersey. On March 18, a woman aged 65 years was brought to the hospital ED by her husband. Hours earlier, they had eaten a meal of pufferfish that a family member had caught in Titusville. Several minutes after eating the fish, both persons experienced tingling around their lips. During the next 2 hours, the woman's symptoms worsened, and she developed vomiting. They contacted the New Jersey Poison Information and Education System and were advised to go to

FIGURE 1. Location of Titusville, Florida

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the hospital ED. The woman developed increasing chest pain and had mild tachycardia and blood pressure of 160/70 mmHg; she was treated with topical nitroglycerine. During the next 4–6 hours, she developed an ascending muscular paralysis. A test of her respiratory function indicated carbon dioxide retention and a rapid decrease to <20% of normal vital capacity for a woman her age. She was electively intubated and placed on a ventilator. Over the next day, she regained her reflexes and voluntary movement. She was extubated at approximately 72 hours and discharged.

Laboratory Findings

Uneaten fish samples recovered in New Jersey were submitted for toxin analysis to the Institute for Marine Biosciences, National Research Council, Canada. Liquid chromatographic-tandem mass spectrometric analysis of uneaten fish samples did not detect tetrodotoxin in any of the pufferfish samples (*1*). However, the analysis confirmed that the fish contained the paralytic shellfish toxin, saxitoxin, and two analogs, N-sulfocarbamoylsaxitoxin and decarbamoylsaxitoxin. Liquid chromatography with postcolumn oxidation and fluorescence detection confirmed these analytical results (*2*).

A split specimen also was submitted to the regional Food and Drug Administration (FDA) laboratory in Queens, New York. Presence of a sodium channel-blocking toxin was confirmed by cell bioassay (*3*). These results are consistent with the presence of saxitoxin or tetrodotoxin.

Toxic Exposure Surveillance System

Since January 1, TESS has identified 10 illnesses of presumed pufferfish poisoning (five from Florida, three from New Jersey, and two from Virgnia). All ill persons reported eating pufferfish originating from the Titusville area (Indian and Banana rivers). All reported at least one of the following symptoms: tingling in the mouth and lips or fingertips, numbness, or peripheral neuropathy. All cases eventually resolved. Efforts are ongoing to identify additional cases.

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Editorial Note: Neurologic illnesses associated with eating pufferfish (i.e., blowfish, sea squab, and Fugu [*Terodontidae* and *Diodontidae* families]) are not common in the United States. Pufferfish are harvested recreationally and commercially

in the United States and internationally. Fish harvested in the United States are often transported to different states for sale. Several of the approximately 100 species of pufferfish contain neurotoxins (i.e., tetrodotoxin and/or saxitoxin); most pufferfish caught in U.S. waters are not known to be toxic, although there have been reports of toxic pufferfish.

The cases in this report occurred after eating pufferfish but are consistent with paralytic shellfish poisoning (PSP). In the United States, PSP is associated with eating filter-feeding shellfish or mollusks. Approximately 10 outbreak-associated PSP cases are reported to CDC each year. Ingestion of paralytic shellfish toxins produces neurologic symptoms that are sensory, cerebellar, and motor. The most common symptoms are tingling and burning of the mouth and tongue, numbness, drowsiness, and incoherent speech. These symptoms occur 30 minutes to 2 hours after ingestion of the fish, depending on the amount of toxin ingested. In severe cases, ataxia, muscle weakness, respiratory paralysis, and death can occur (*4*).

Saxitoxin and tetrodotoxin together and saxitoxin alone in freshwater pufferfish have been reported in waters near Thailand (*5*) and Bangladesh (*6*). Saxitoxin and its analogs are produced by dinoflagellates of the *Gonyaulacoid* family and by some freshwater cyanobacteria (*7*). Shellfish are contaminated when toxin-producing organisms multiply in the water and form a bloom, and water-siphoning shellfish—principally clams, mussels, and scallops—filter out organisms to feed and absorb any toxins produced. Generally, nonfilter feeders such as fish, lobsters, crabs, and shrimp are considered safe to eat, even if caught in contaminated waters. However, pufferfish eat molluscs and might accumulate or even magnify the toxin (*8*).

Saxitoxin is heat- and acid-stable and does not alter the odor or taste of food. This toxin cannot be destroyed by cooking or freezing. It is rapidly absorbed through the human gastrointestinal tract and excreted in urine. The molecule is complex and contains a guanidinium moiety. This portion of the molecule is believed to block the opening of the voltage-sensitive Na+ channel, preventing the rapid entrance of sodium into the cell at depolarization. The rapid movement of sodium is necessary for propagation of neural impulses and mediation of cellular function. The outcome of blockage at this site is motor paralysis.

Tetrodotoxin is a powerful neurotoxin that has been detected in many pufferfish species; its presence is usually associated with season, geographic location, sex, and organ tissue. Tetrodotoxin might be produced by *Vibrio* species or other bacteria that bioaccumulate in the pufferfish (*9*). Tetrodotoxin has been detected in pufferfish throughout the Pacific Ocean and the Baja California coastal region. This is the first report to CDC of neurotoxic pufferfish in the Atlantic Ocean.

Health-care providers should be aware that rapid onset of neurologic symptoms after a meal of pufferfish could be caused by saxitoxin. Ill persons should be advised to proceed to a hospital ED and contact their local poison control center.

On April 11, the New Jersey Department of Health and Senior Services (NJDHSS) issued a report describing two of the New Jersey cases. On April 12, NJDHSS issued a warning about eating pufferfish originating from the Titusville area. On April 15, FDA also issued a health advisory on pufferfish caught from this area. The Florida Department of Health, in collaboration with the Florida Department of Agriculture and Consumer Services and the Florida Fish and Wildlife Conservation Commission, is assessing the extent of the presence of saxitoxin in pufferfish and other marine species. New Jersey, Florida, FDA, and CDC are continuing to investigate this situation.

Acknowledgments

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Fatal Yellow Fever in a Traveler Returning from Amazonas, Brazil, 2002

Yellow fever (YF) is a mosquitoborne viral disease that has caused deaths in U.S. and European travelers to sub-Saharan Africa and tropical South America (*1–5*). Although no specific treatment exists for YF and the case-fatality rate for severe YF is approximately 20%, an effective vaccine is available (*6*). This report describes a case of fatal YF in an unvaccinated traveler who had returned from a 6-day fishing trip on the Rio Negro west of Manaus in the state of Amazonas, Brazil. Because information from some commercial outfitters and travel agents might underestimate health risks, healthcare providers and travelers should review vaccination and other traveler's health recommendations from public health agencies.

On return from Brazil on March 10, 2002, a previously healthy man aged 47 years from Texas presented to an emergency department (ED) with a 4-day history of crampy abdominal pain and a 1-day history of fever of 102.8° F (39.3° C) and severe headache. At the ED, he received symptomatic treatment and doxycyline for a possible rickettsial disease and was discharged. His fever and headache worsened, and on March 12 he was hospitalized for intractable vomiting.

On admission, physical examination revealed an ill-appearing, febrile man. Laboratory tests documented leukopenia (2,300/mm^3 [normal: 4,800–10,800/mm^3]), anemia (hemoglobin 10.5 g/dL [normal: 14–18 g/dL]), thrombocytopenia (36,000/mm^3 [normal: 150,000–450,000/mm^3]), abnormal coagulation (prothrombin time: 29 seconds [normal: 10.5–13.0 seconds] and INR 6.3), renal failure (creatinine: 5.5 mg/dL [normal: 0.6–1.0 mg/dL] and blood urea nitrogen: 65 mg/dL [normal: 6–20 mg/dL]), and liver failure (ALT: 7,600 U/L [normal: 30–65 U/L], AST: 13,700 U/L [normal: 15–37 U/L], and bilirubin: 3.3 mg/dL [normal: 0–1.0 mg/dL]). The patient was presumptively treated for malaria. Bacterial cultures of blood, urine, and cerebrospinal fluid showed no growth, and a malaria smear of peripheral blood was negative. Three days after admission, the patient developed shock, seizures, and excessive bleeding at venipuncture sites; he died the following day.

Tests performed at CDC on serum samples collected on the second day of illness were negative for IgM and IgG antibody to South American arboviruses (i.e., YF, dengue, St. Louis encephalitis, and Venezuelan equine encephalomyelitis viruses); serum samples collected on days 3–7 also were negative for IgM and IgG antibody to YF virus. Serum specimens collected on days 4, 5, and 7 of illness and a postmortem liver sample were positive for YF virus RNA by RT-TaqMAN™ PCR tests. Virus isolation was attempted by inoculation of serum samples onto Vero and AP-61 cells in tissue culture, and by inoculation of postmortem plasma onto Vero cells in tissue culture and intracerebrally into suckling mice. No virus was recovered.

Histopathologic examination of a postmortem percutaneous needle sample of the liver demonstrated massive acidophilic hepatocellular necrosis with minimal inflammation. Immunohistochemistry (IHC) tests using a cross-reactive, polyclonal flavivirus antibody and a polyclonal YF-virus–specific antibody were positive. IHC tests for New World arenaviruses (Machupo, Guanarito, and Sabia viruses), spotted fever rickettsiae, dengue virus, and *Leptospira* spp. were negative. A postmortem serum sample was negative for IgM and IgG antibody to *Leptospira* spp. and New World arenaviruses, and negative for Machupo virus by ELISA antigen capture. A blood sample collected on day 2 was negative for malaria by PCR test.

The deceased traveler was one of 15 U.S. citizens who visited the Amazon as part of a fishing trip. The patient slept aboard an air-conditioned fishing boat and wore DEET-impregnated clothing while fishing. Before traveling to the Amazon, the traveler had not received medical consultation, YF vaccine, or malaria prophylaxis. Information on the outfitter's website stated, "The International medical community suggests yellow fever and malaria prophylaxis for the Amazon region. This is not a requirement to enter Brazil, but merely a suggestion." A brochure from the group's travel agent stated, "We do not suggest any inoculations of any kind for this trip....But to make sure you are worry free, consult with your personal physician."

The 15 U.S. citizens living aboard this fishing boat (including the patient) were interviewed or investigated by the Texas Department of Health. Other than the patient, none reported febrile illnesses. Eight (53%) were appropriately vaccinated for YF according to World Health Organization (WHO) guidelines (i.e., within the preceding 10 years and ≥10 days before arrival in Manaus). Of the seven that were not appropriately vaccinated, one had received YF vaccine 11 years earlier, one had been vaccinated 5 days before arrival in Manaus, and one was unsure whether he had been vaccinated in the military >30 years earlier. Of the four persons (including the patient) who were never vaccinated, three stated that they had been "unconcerned" about the risk for YF. Three (20%) of the 15 reported taking malaria prophylaxis.

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Editorial Note: This case represents the third reported YF death in a U.S. citizen following travel to the Amazon region since 1996 (*1,2*). YF can initially manifest as fever, headache, myalgias, arthralgias, epigastric pain, or vomiting (*6*). Illness can progress to liver and renal failure, and thrombocytopenia and abnormal coagulation can cause hemorrhagic symptoms and signs. Definitive diagnosis is made by viral culture of blood or tissue specimens or by identification of YF virus antigen or nucleic acid in tissues (especially liver) using IHC, ELISA antigen capture, or PCR tests. Although antibodies are not always present in the first week of illness, detection of YF-specific IgM antibody by capture ELISA with confirmation of ≥4-fold rise in neutralizing antibody titers between acute- and convalescent-phase serum samples also is diagnostic.

On returning home, viremic travelers can establish new foci of YF transmission where susceptible vectors are present. The geographic range of *Aedes aegypti*, a mosquito that transmits YF virus among humans, includes the southern United States. Patients with suspected or confirmed YF should be isolated from contact with mosquitoes during at least the first 5 days of illness, and local or state health departments must be notified immediately (*7*). YF is one of three diseases (along with cholera and plague) designated by the International Health Regulations as internationally quarantinable and requires international reporting of all suspected and confirmed cases within 24 hours (*8*).

Commercial outfitters and travel agents should ensure that health information provided to travelers is consistent with CDC and WHO YF vaccination and malaria prophylaxis recommendations. Undervaccination of travelers at risk for YF might be an increasing problem. Using a mathematical model based on U.S. arrivals to countries where YF transmission occurs and on YF vaccine doses sold to U.S. civilians, overall coverage among U.S. travelers to regions where YF is endemic might have declined 50% from 1992 to 1998 (*9*). The degree to which inaccurate health information contributes to apparently decreasing coverage is unknown.

Because of the severity of YF illness, the potential for epidemics, and the availability of an efficacious vaccine, CDC recommends vaccination of persons aged ≥9 months traveling to nonurban areas where YF is endemic (i.e., sub-Saharan Africa and tropical South America, including Amazonas states in Brazil and Venezuela). To allow for an adequate immune response, vaccination should be completed ≥10 days before travel. Some countries, other than the United States, require YF vaccination for travelers returning from countries where YF is endemic and may impose quarantine if the traveler does not have official vaccination documentation or a written medical waiver. Although recent reports described occurrence of severe systemic illness potentially related to recent YF vaccination (*10*), the rarity of these events does not warrant changes in YF vaccination recommendations. Before international travel, persons should review CDC recommendations (http://www.cdc.gov/travel) for prevention of vectorborne and other travel-related diseases.

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Preliminary FoodNet Data on the Incidence of Foodborne Illnesses — Selected Sites, United States, 2001

An estimated 76 million persons contract foodborne illnesses each year in the United States (*1*). CDC's Emerging Infections Program Foodborne Diseases Active Surveillance Network (FoodNet) collects data about 10 foodborne diseases in nine U.S. sites to quantify and monitor foodborne illnesses (*2*). This report describes preliminary surveillance data for 2001 and compares them with 1996–2000 data. The data show a decrease in the major bacterial foodborne illnesses, indicating progress toward meeting the national health objectives of reducing the incidence of foodborne diseases by 2010 (*3*). However, the data do not show a sustained decline in some infections, indicating that increased efforts are needed to reduce further the incidence of foodborne illnesses.

In 1996, active surveillance began for laboratory-diagnosed cases of infection with *Campylobacter*, *Escherichia coli* O157, *Listeria monocytogenes*, *Salmonella*, *Shigella*, *Vibrio*, and *Yersinia*

enterocolitica infections in Minnesota, Oregon, and selected counties in California, Connecticut, and Georgia. In 1997, FoodNet was expanded to include laboratory-diagnosed cases of *Cryptosporidium parvum, Cyclospora cayetanensis,* and hemolytic uremic syndrome (HUS). From 1996 to 2001, the FoodNet surveillance population increased from five sites and a population of 14.2 million to nine sites and 37.8 million persons (13% of the U.S. population).

To identify cases, FoodNet personnel contact each clinical laboratory in their surveillance area either weekly or monthly depending on the size of the clinical laboratory. Cases represent the first isolation of a pathogen from a person by a clinical laboratory; most specimens are obtained for diagnostic purposes from ill persons. HUS surveillance is conducted by contacting all FoodNet-identified pediatric nephrologists at least monthly. In this report, analyses of HUS data were performed only on persons aged <15 years. Preliminary incidence figures for 2001 were calculated by using the number of cases of diagnosed infections or syndromes that FoodNet had identified as the numerator and 2000 population estimates as the denominator (*4*). Final incidence will be calculated when 2001 population census estimates are available.

2001 Surveillance

During 2001, a total of 13,705 laboratory-diagnosed cases of 10 foodborne diseases under surveillance was identified: 5,198 of *Salmonella* infection, 4,740 of *Campylobacter*, 2,201 of *Shigella*, 574 of *Cryptosporidium*, 565 of *E. coli* O157, 145 of *Yersinia*, 94 of *Listeria*, 80 of *Vibrio*, 32 of *Cyclospora,* and 76 of HUS. Among the 4,520 (87%) *Salmonella* infection isolates serotyped, the five most common serotypes accounted for 65% of the infections for which serotype was known: 1,132 (25%) were serotype Typhimurium, 689 (15%) were Enteritidis, 553 (12%) were Newport, 321 (7%) were Heidelberg, and 227 (5%) were Javiana.

Substantial variations in incidence of specific diseases, defined as laboratory-diagnosed infections per 100,000 persons, were reported among the sites (Table 1). The incidence of *Campylobacter* cases ranged from 7.0 in Maryland to 31.7 in California. The incidence of *Salmonella* ranged from 8.2 in Oregon to 20.6 in Georgia. The incidence of infection with specific *Salmonella* serotypes also varied. The overall incidence of infection with *S.* Typhimurium was 3.3, ranging from 1.7 in California to 4.1 in Minnesota and New York; *S.* Enteritidis was 2.0, ranging from 0.8 in Oregon to 4.4 in Maryland; *S.* Newport was 1.6, ranging from 0.5 in Oregon to 3.3 in Georgia; *S.* Heidelberg was 0.9, ranging from 0.4 in Connecticut to 1.5 in California; and *S.* Javiana was 0.7, ranging from no cases in New York and Connecticut to 2.1 in Georgia. The incidence of *Shigella* cases ranged from 1.3 in New York to 13.2 in California; *E. coli* O157 cases ranged from 0.4 in Maryland to 4.8 in Minnesota; *Yersinia* cases ranged from 0.3 in Maryland, New York, and Connecticut to 0.6 in Georgia; *Listeria* cases ranged from 0.1 in Minnesota to 0.5 in California; *Vibrio* cases ranged from 0.1 in Minnesota, New York, Oregon, and Tennessee to 0.6 in California; *Cryptosporidium* cases ranged from 0.5 in Connecticut to 3.9 in Minnesota. *Cyclospora* cases were identified only in Connecticut and Georgia. Of the nine FoodNet sites, Minnesota and Oregon had the highest incidence of HUS. For Minnesota, incidence per 100,000 children was 3.6 for children aged <5 years and 1.8 for children aged <15 years. For Oregon, incidences for children in those age groups were 2.7 and 1.7, respectively. HUS incidence for children aged <15 years ranged from 0.3 in Connecticut and Georgia to 1.8 in Minnesota.

TABLE 1. Incidence* of cases of infection with nine pathogens and of one syndrome under surveillance in the Foodborne Diseases Active Surveillance Network (FoodNet), by site, compared with national health objectives for 2010 — United States 2001

Pathogen/syndrome	CA	CO	CT	GA	MD	MN	NY	OR	TN	Overall incidence	National health objective for 2010
Campylobacter	31.7	15.9	14.5	7.4	7.0	19.4	11.7	17.4	7.5	13.8	12.3
E. coli O157	1.1	1.9	1.1	0.6	0.4	4.8	1.5	2.3	1.4	1.6	1.0
Listeria	0.5	0.2	0.4	0.2	0.3	0.1	0.3	0.4	0.2	0.3	0.25
Salmonella	14.3	14.7	13.3	20.6	14.7	14.1	12.8	8.2	15.4	15.1	6.8
Shigella	13.2	7.1	1.8	8.6	3.3	10.0	1.3	3.2	3.5	6.4	NA†
Vibrio	0.6	0.2	0.3	0.3	0.4	0.1	0.1	0.1	0.1	0.2	NA
Yersinia	0.5	0.4	0.3	0.6	0.3	0.4	0.3	0.4	0.4	0.4	NA
Cryptosporidium	0.9	0.7	0.5	1.9	0.7	3.9	0.7	1.7	1.0	1.5	NA
Cyclospora	NR§	NR	0.1	0.3	NR	NR	NR	NR	NR	0.1	NA
HUS¶	1.0	1.3	0.3	0.3	1.0	1.8	0.5	1.7	0.8	0.9	NA

* Per 100,000 persons.
† Not applicable.
§ None reported.
¶ Hemolytic uremic syndrome. Incidence per 100,000 children aged <15 years.

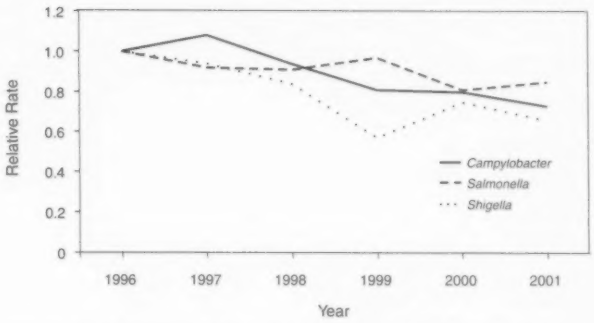
Crude incidence for foodborne diseases varied by age. Infants and young children had the highest incidence of most foodborne infections. The rates were highest in children aged <1 year for *Salmonella* (134.1 per 100,000 children), *Campylobacter* (33.5), *Yersinia* (11.2), and *Listeria* (1.9) and highest in children aged 1–4 years for *Shigella* (29.1), *E. coli* O157 (6.8), and *Cryptosporidium* (3.9). The highest incidence of *Cyclospora* infection (0.1) was in persons aged 20–29 years, and the highest incidence of *Vibrio* infection (0.7) was in persons aged 65–74 years. The incidence of *Listeria* cases in persons aged ≥75 years (1.7) approached the incidence in infants. Incidence of HUS was 1.5 among children aged <5 years and 0.9 among children aged <15 years.

1996–2001 Comparison

The number of sites and the population under surveillance have nearly doubled since FoodNet began in 1996. Because of substantial variation in incidence among the sites, adding new sites influences overall crude incidence. To account for the increased population and variation in the incidence among sites, a log-linear Poisson regression model (*5*) was used to estimate the effect of time on the incidence of the various pathogens, treating time (i.e., calendar year) as a categorical variable, with 1996 as the reference year. The relative change in incidence rates during 1996–2001 was estimated and confidence intervals for that change were calculated. The regression model was used to estimate combined incidences of the four diseases covered by specific national health objectives and for all seven bacterial pathogens.

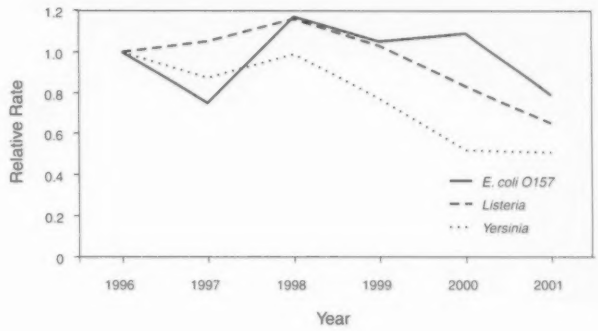
The bacterial pathogens with the highest relative incidence during 1996–2001 were *Campylobacter, Salmonella,* and *Shigella* (Figure 1). Pathogens with lower incidence were *E. coli* O157, *Listeria,* and *Yersinia* (Figure 2). The incidence of infection with most pathogens decreased during 1996–2001. For four pathogens (*Yersinia, Listeria, Campylobacter,* and *Salmonella*), this decrease was observed consistently over several years. During 1996–2001, the estimated incidence of *Yersinia* infections decreased 49% (95% confidence interval [CI]=35% to 60% decrease), *Listeria* decreased 35% (95% CI= 9% to 53% decrease), *Campylobacter* decreased 27% (95% CI=19% to 35% decrease), and *Salmonella* decreased 15% (95% CI=7% to 22% decrease). Considerable temporal variations were observed for the five most common *Salmonella* serotypes. During 1996–2001, *S.* Typhimurium decreased 24% (95% CI=13% to 34% decrease), *S.* Enteritidis decreased 22% (95% CI=41% decrease to 3% increase), *S.* Newport increased 32% (95% CI=24% decrease to 128% increase), *S.* Heidelberg increased 34% (95% CI=7% to 66% increase), and *S.* Javiana increased 228% (95% CI=75% to 513% increase). A substantial decline in the incidence of *S.* Enteritidis infection during 1996–1999 was partially reversed by an increased incidence in 2000 and 2001. During 1996–2001, the estimated incidence of *E. coli* O157 infections decreased 21% (95% CI=41% decrease to 5% increase), but this decline reflects a decrease only for 2001. The incidence of *Shigella* infections showed considerable variation by year and site. The estimated incidence in 2001 was 35% lower than in 1996 (95% CI=57% decrease to 3% increase). The incidence of *Vibrio* infections was 91% higher in 1997 than it was in 1996, reflecting the emergence of *Vibrio parahaemolyticus* O3:K6 (*6*), and has not shown a consistent change since; the incidence was 83% higher in 2001 than in 1996 (95% CI=3% to 224% increase).

FIGURE 1. Relative rates* compared with 1996, adjusted for site, of laboratory-diagnosed cases of *Campylobacter, Salmonella,* and *Shigella,* by year — FoodNet, United States, 1996–2001



* Bacterial pathogens with highest incidences of the 10 studied diseases.

FIGURE 2. Relative rates compared with 1996, adjusted for site, of laboratory-diagnosed cases of *E. coli* O157, *Listeria,* and *Yersinia* infections, by year — FoodNet, United States, 1996–2001



The national health objectives for 2010 target specific goals for the reduction in the incidence of four foodborne diseases: *Campylobacter, E. coli* O157, *Listeria,* and *Salmonella* infections (Table 1). Using the multivariate regression model, the combined estimated incidence of infections caused by these four pathogens in 2001 was 21% lower than in 1996. The combined estimated incidence of infections caused by the seven bacterial pathogens in 2001 was 23% lower than in 1996.

Surveillance for the parasitic pathogens, *Cryptosporidium* and *Cyclospora*, began in 1997. During 1997–2001, the incidence of *Cryptosporidium* cases decreased 33% (95% CI=4% to 53% decrease). Although the incidence of *Cyclospora* has decreased since 1997, the statistical model could not be applied to *Cyclospora* because of the rarity of cases (124 cases during 1997–2001).

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Editorial Note: During 1996–2001, incidence of infections caused by *Yersinia*, *Listeria*, *Campylobacter*, and *Salmonella* have shown a substantial and sustained decline. The declines in the incidence of foodborne diseases targeted in the national health objectives indicates important progress. However, additional measures will be needed to reduce further the incidence of these diseases to achieve the national health objectives.

On the basis of studies conducted by FoodNet to monitor factors that can influence the incidence of foodborne diseases, changes in health-care–seeking behaviors for persons with diarrhea or changes in laboratory testing practices are unlikely to explain the declines observed in disease incidence (*7,8*). Enhanced surveillance and outbreak investigations have identified new control measures, and focused attention on preventing foodborne diseases. The declines in the incidence of these foodborne infections occurred in the context of several control measures, including implementation by the U.S. Department of Agriculture's Food Safety Inspection Service (FSIS) of the Pathogen Reduction/Hazard Analysis Critical Control Point (HACCP) systems regulations in meat and poultry slaughter and processing plants. The decline in the rate of *Salmonella* infections in humans coincided with a decline in the prevalence of *Salmonella* isolated from FSIS-regulated products to levels well below baseline levels before HACCP was implemented (*9*). Additional interventions that have been introduced during the past several years to prevent foodborne diseases include egg-quality assurance programs for *S.* Enteritidis, increased attention to fresh produce safety through better agricultural practices, introduction of HACCP in the seafood industry, regulation of fruit and vegetable juice, industry efforts including new intervention technologies to reduce food contamination, food safety education, and increased regulation of imported food.

Although the incidence of infection has declined for several foodborne diseases, the incidence of foodborne diseases remains high. Efforts to reduce the rate of foodborne illnesses might include steps to reduce the prevalence of these pathogens in their respective important animal reservoirs: cattle (*E. coli* O157), egg-laying chickens (*S.* Enteritidis), and seafood, particularly oysters (*Vibrio*). Implementation of nationwide, consistent, on-farm preventive controls would reduce the risk for human illness from *S.* Enteritidis-contaminated eggs. The increases in infections caused by *S.* Newport, *S.* Heidelberg, and *S.* Javiana (*10*) and the high incidence of foodborne diseases in children, especially infants, are of major concern. To determine possible risk factors for infections and opportunities for prevention, FoodNet has initiated a case-control study of sporadic cases of *Salmonella* and Campylobacter in young children.

The findings in this report are subject to at least three limitations. First, FoodNet data are limited to diagnosed illnesses; however, most foodborne illnesses are neither laboratory-diagnosed nor reported to state health departments. For example, although clinical laboratories in FoodNet sites routinely test stool specimens for *Salmonella* and *Shigella,* and almost always for *Campylobacter,* only about 60% routinely test for *E. coli* O157, and fewer test routinely for other pathogens. Variations in testing for pathogens could account for some of the variations in incidence, including variations by site and age. Second, because some laboratory-diagnosed illnesses reported to FoodNet also might be acquired through nonfoodborne routes (e.g., through contaminated water, person-to-person contact, and direct animal exposure), reported rates do not represent foodborne sources exclusively. Finally, although FoodNet data provide the most detailed information available for these infections, the data do not reflect the entire U.S. population.

The 2001 FoodNet final report will include incidence figures and other information, such as illness severity, and will

be available in late 2002 at http//www.cdc.gov/foodnet. Because the population in the FoodNet sites has increased since 2000, final 2001 rates will be somewhat lower than preliminary rates.

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Racial and Ethnic Disparities in Infant Mortality Rates — 60 Largest U.S. Cities, 1995–1998

During the 20th century, U.S. infant mortality rates (IMRs) declined by 90% (*1*); however, many of the largest U.S. cities continue to have high IMRs compared with national rates. Studies of U.S. infant mortality by region document persisting geographic disparities (*2,3*) and differences across racial/ethnic groups. This report highlights the wide disparities in the most recent overall race- and ethnicity-specific IMRs for the largest U.S. cities and describes key differences among those cities. The findings demonstrate the need to decrease infant mortality among blacks in U.S. cities.

IMRs (number of infant deaths per 1,000 live births) were calculated by using the National Center for Health Statistics' Perinatal Mortality Data for 1995–1998. The numbers of infant deaths were obtained from linked birth- and death-certificate files, and the numbers of live births were obtained from corresponding birth-certificate files. Rates were based on the mother's race, ethnicity, and city of residence at time of birth by using Federal Information Processing Standards place-of-residence codes as units of analysis.

Rates and numbers were reported for the 60 cities with 1990 populations >250,000. Rates for four cities meeting the population criteria—Cleveland, Los Angeles, Long Beach, and Oklahoma City—were not reported because >10% of their county infant deaths were not linked to birth certificates. Race- and ethnicity-specific rates were reported for non-Hispanic black, non-Hispanic white, and Hispanic infants. Rates based on <20 infant deaths and rates for other racial/ethnic groups were not reported because the numbers of infant deaths among these groups were too low for meaningful analysis.

Characteristics of cities in the highest quartile for IMRs were compared with those in the lowest quartile for each of the three racial/ethnic groups. Quartiles were defined based on the ranking of city IMRs. In addition to very low (<1,500g) and moderately low (1,500–2,499g) birthweight, individual- and community-level variables were considered. Individual-level variables were maternal race/ethnicity, late prenatal care (enrollment after the sixth month of pregnancy) or no prenatal care, low maternal education (<12 years), and birth to a teenage mother (maternal age <18 years). Community-level variables were population size, geographic region, segregation (determined by the index of dissimilarity, which measures the extent to which blacks and nonblacks inhabit different parts of a metropolitan area) (*4*,*5*), median household income, and childhood poverty. Metropolitan and county data were used when city data were not available.

During 1995–1998, IMRs varied widely among the 60 largest U.S. cities (Table 1). Overall rates ranged from 4.5 to 15.4 infant deaths per 1,000 live births (median rate: 7.8). Non-Hispanic white IMRs were reported for 56 cities, non-Hispanic black IMRs for 52 cities, and Hispanic IMRs for 34 cities. IMRs vary by race/ethnicity (Figure 1); the median black IMR of 13.9 per 1,000 live births was substantially higher than both white and Hispanic IMRs (6.4 and 5.9, respectively). Black IMRs were 1.4–4.8 times higher than white IMRs in all 49 cities where both were reported.

Wide differences also existed within each racial/ethnic group (Table 1). The city with the highest IMR in each racial/ethnic group had an IMR at least twice that of the city with the lowest IMR in that group. The wide black IMR distribution reflected the broad range of IMRs among black infants compared with Hispanic and white infants. The distribution of white IMRs showed higher rates in some cities (e.g., Norfolk's IMR was noticeably higher compared with other cities [11.6 deaths per 1,000 live births]). Similarly, the distribution of Hispanic IMRs showed higher rates in some cities (e.g., Milwaukee, Minneapolis, and Philadelphia).

Cities with the highest IMRs tended to have a larger proportion of black births (median: 57.1%, range: 36.8%–82.4%) and a smaller proportion of Hispanic births (median: 4.7%, range: 0.9%–33.5%) (Table 2). Conversely, cities with the lowest IMRs tended to have a smaller proportion of black births (median: 4.2%, range: 0.7%–25.0%) and a larger proportion of Hispanic births (median: 42.7%, range: 7.1%–86.0%). Highest-quartile cities had more very low- and moderately low-birthweight infants, more births to teenage mothers, more late or absent prenatal care, and more racial segregation (*4*,*5*). Cities with higher IMRs were more commonly in the Midwest, Southeast, and Northeast, and those with lower IMRs were clustered in the Pacific West and West Central regions.

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Editorial Note: This report highlights considerable geographic, racial, and ethnic differences in IMRs in the largest U.S. cities. Because urban communities are targets for many local, state, and federal initiatives, reporting and comparing city-specific IMRs for understanding city-level differences in child health is important.

Previous studies have examined factors related to black-white disparities in infant mortality. Infants with very low birthweight account for approximately two thirds of the black-white gap in infant mortality (*6*). Preterm delivery is associated with the deaths of infants with very low birthweight, demonstrating the need to reduce preterm births, particularly among black infants. Racial disparity in IMRs has not been explained fully by differences in socioeconomic status. Black infants born to college-educated parents have higher IMRs than white infants born to parents of similar educational background; this difference is attributed to a higher rate of very low birthweight (*7*). Education of the mother does not confer the same level of protection against infant mortality among black women as it does among white women, suggesting that a complex interaction of social, environmental, and biologic factors that are experienced uniquely by black women might account for the disparity. Racial segregation is an important macrolevel predictor of greater black-white infant mortality differences in 38 U.S. metropolitan statistical areas, independent of differences in median income (*8*).

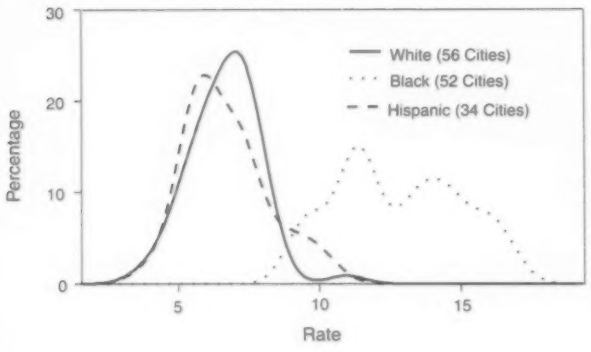
Despite higher poverty and lower education rates, Hispanic infants have higher birthweights and their IMRs approximate those of white infants. This finding is consistent with previous studies (*9*) and contradicts common assumptions about poor, underserved minority groups. Cultural practices, family support, selective migration, diet, and genetic heritage are possible contributing factors (*9*). Furthermore, U.S.

TABLE 1. Number and rate* of infant mortality, by race/ethnicity — 60 largest U.S. cities, 1995–1998

City†	Non-Hispanic White		Non-Hispanic Black		Hispanic§		Total¶	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Albuquerque	66	5.5	8	—	88	5.5	174	5.7
Anaheim	32	4.7	8	—	72	4.1	132	4.7
Arlington	72	5.7	37	12.3	32	6.6	153	7.0
Atlanta	49	6.7	318	14.6	20	6.1	391	11.7
Austin	72	4.1	47	9.3	90	5.2	222	5.3
Baltimore	78	7.4	422	14.8	3	—	517	12.7
Birmingham	29	7.0	203	16.2	3	—	235	13.8
Boston	53	4.8	110	10.0	35	5.3	212	6.7
Buffalo	76	8.1	143	17.6	10	—	233	12.0
Charlotte	85	4.5	141	11.8	8	—	240	7.0
Chicago	302	7.0	1,555	17.6	497	7.1	2,414	11.5
Cincinnati	91	8.4	202	17.8	1	—	294	12.9
Colorado Springs	103	5.5	28	12.3	32	9.2	172	6.8
Columbus	217	7.7	181	14.5	3	—	419	9.6
Corpus Christi	38	6.7	5	—	61	5.1	105	5.6
Dallas	121	5.4	216	9.6	214	5.1	571	6.4
Denver	101	6.8	63	15.5	121	7.3	293	7.9
Detroit	64	8.2	885	16.0	12	—	972	14.4
El Paso	33	5.4	10	—	227	5.0	275	5.1
Fort Worth	83	5.8	100	12.8	91	6.3	282	7.4
Fresno	77	7.4	57	18.3	131	7.2	295	7.9
Honolulu	23	5.8	5	—	9	—	114	5.9
Houston	162	4.6	398	10.1	450	5.5	1,062	6.4
Indianapolis	274	7.5	200	14.0	11	—	497	9.2
Jacksonville	182	6.9	210	13.9	11	—	414	9.3
Kansas City	108	6.8	159	15.8	12	—	286	9.9
Las Vegas	118	4.9	44	9.4	55	4.3	235	5.1
Louisville	112	6.4	97	11.8	2	—	215	8.1
Memphis	81	7.2	599	18.8	7	—	692	15.4
Mesa	120	6.8	6	—	48	7.2	187	7.2
Miami**	30	5.7	233	9.7	129	4.6	396	6.8
Milwaukee	110	7.1	346	16.7	63	10.8	535	12.1
Minneapolis	76	6.3	75	12.0	20	10.2	214	8.9
Nashville	129	6.4	114	11.5	4	—	251	7.7
Newark	8	—	181	15.5	57	8.7	249	12.2
New Orleans	32	6.4	254	10.4	2	—	291	9.4
New York	586	4.5	1,702	12.1	1,039	6.4	3,597	7.4
Norfolk	82	11.6	134	16.5	4	—	230	14.0
Oakland	17	—	116	11.8	21	2.8	182	7.1
Omaha	122	7.8	58	15.2	15	—	202	9.0
Philadelphia	198	6.7	765	16.6	95	9.5	1,097	12.0
Phoenix	274	7.0	74	15.6	342	8.0	716	7.8
Pittsburgh	64	5.9	128	18.6	1	—	197	10.5
Portland	98	4.8	29	11.0	17	—	159	5.5
Sacramento	123	7.1	89	12.4	57	5.4	312	7.2
San Antonio	136	6.0	76	14.0	399	7.1	618	7.2
San Diego	95	3.5	95	12.7	139	4.5	398	5.2
San Francisco	27	2.6	43	12.3	37	4.9	153	4.6
San Jose	76	4.2	23	10.5	153	5.6	330	5.1
Santa Ana	9	—	6	—	144	4.7	165	4.6
Seattle**	57	3.6	37	12.1	7	—	128	4.5
St. Louis	58	7.8	220	14.8	2	—	285	12.3
St. Paul	77	7.5	52	18.0	7	—	171	8.9
Tampa	74	5.4	138	15.8	42	7.4	259	8.9
Toledo	79	5.6	64	12.2	14	—	158	7.5
Tucson	108	6.8	12	—	103	5.8	234	6.3
Tulsa	120	7.5	58	11.9	9	—	205	8.2
Virginia Beach	105	5.8	67	12.5	6	—	188	7.2
Washington, D.C.	14	—	414	17.5	20	6.9	468	14.2
Wichita	134	7.6	46	14.7	12	—	202	8.3

* Per 1,000 live births. Rates are not calculated for <20 deaths.
† Federal Information Processing Standards coded place of residence (city) as the unit of analysis.
§ Includes any infant with a mother of Hispanic ethnicity regardless of race.
¶ Number of deaths might not add to total because of missing data.
** Number and rates of deaths for this city vary substantially from those reported by the jurisdiction.

FIGURE 1. Infant mortality rates,* by race/ethnicity — 60 largest U.S. cities†, 1995–1998



* Per 1,000 live births.
† Federal Information Processing Standards coded place of residence (city) as the unit of analysis.

Hispanics are a heterogeneous group, and IMRs are higher among Puerto Rican infants (*10*). In Philadelphia, 79% of Hispanic births were born to Puerto Rican mothers, possibly explaining the higher IMR in that city.

The findings in this report are subject to at least two limitations. First, accurate and consistent reporting of city of residence on birth and death certificates in some cities is problematic. To address this problem, many health departments geocode the mother's street address reported on the birth certificate and then aggregate to city and subcity boundaries. Although geocoding vital records might allow for the calculation of more accurate IMRs for some cities, especially those with a high percentage of correct address matches, not all urban health departments have that capability. Second, reporting requirements specify the rapid transmission of vital statistics data from states to CDC, not always allowing time for the inclusion of geocoded residences in the national vital statistics data files.

The wide differences both within and among the racial/ethnic groups in this report suggest that city IMRs can be reduced further. Reducing national IMRs will require ongoing scientific research and partnerships with diverse community groups to identify culturally sensitive strategies. Efforts to eliminate IMR disparities in urban communities include CDC's Initiative on Eliminating Ethnic Health Disparities, Healthy People 2010; CDC's Racial and Ethnic Approaches to Community Health (REACH 2010) project; and the Health Resources and Services Administration's Healthy Start Initiative. One city-driven initiative, the Perinatal Periods of Risk Practice Collaborative, has enlisted 14 U.S. cities to adopt the World Health Organization's Perinatal Periods of Risk Approach to monitor and investigate fetal and infant mortality.

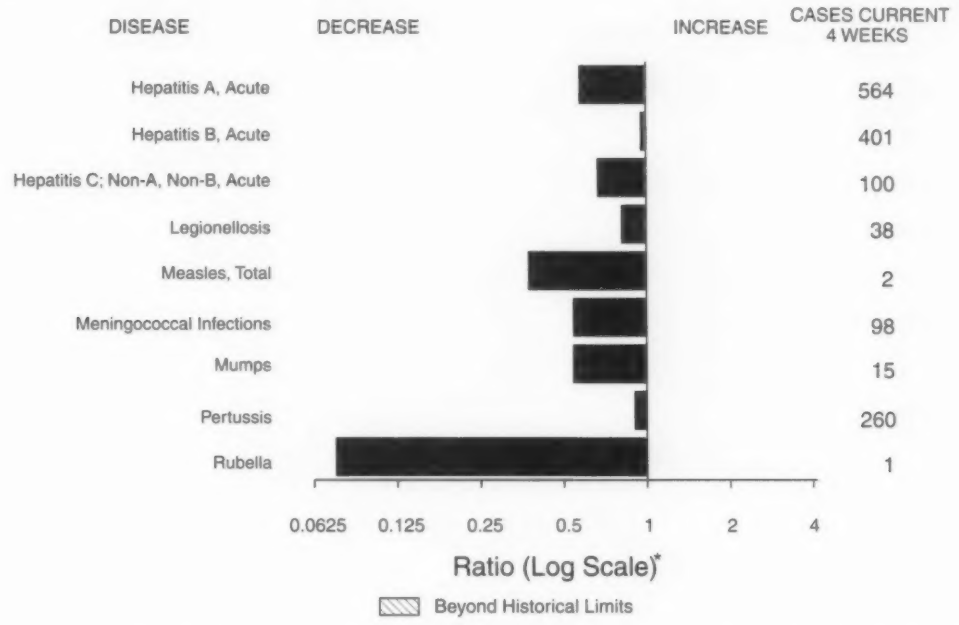
TABLE 2. Median values of infant mortality risk factors for cities* with the highest and lowest infant mortality rates (IMRs),† by quartile§ and race/ethnicity — 60 largest U.S. cities, 1995–1998

Characteristic	White (n=56)		Black (n=52)		Hispanics (n=34)		Total (n=60)	
	Lowest IMRs	Highest IMRs	Lowest IMRs	Highest IMRs	Lowest IMRs	Highest IMRs	Lowest IMRs	Highest IMRs
IMRs and birthweight								
IMRs	4.6	7.7	10.4	17.6	4.6	8.7	**5.2**	**12.3**
Very low birthweight (<1,500g)	1.0%	1.3¶	3.0%	3.3%**	0.9%	1.4%††	**1.1%**	**2.4%¶**
Moderately low birthweight (1,500–2,499g)	5.3%	6.0%**	10.3%	10.9%	5.0%	6.0%**	**5.8%**	**8.9%¶**
Individual-level factors								
% Black births	—	—	—	—	—	—	**4.2%**	**57.1%¶**
% Hispanic births	—	—	—	—	—	—	**42.7%**	**4.7%¶**
Maternal age <18 years	1.8%	4.0%¶	9.5%	11.4%**	6.1%	9.3%††	**4.8%**	**8.5%¶**
Maternal education <12 years	8.2%	18.0%††	26.7%	31.0%	50.8%	55.0%	**26.8%**	**28.5%**
Late prenatal care	2.0%	3.0%**	5.3%	9.4%††	5.0%	6.6%	**4.3%**	**6.9%****
Community-level factors								
1999 city population§§	571,561	384,160	506,385	404,141	418,658	404,141	**503,637**	**401,726**
Dissimilarity¶¶	0.5	0.7**	0.6	0.7**	0.5	0.6	**0.5**	**0.8¶**
Median household income***	$37,547	$33,859	$35,901	$33,554	$37,854	$35,127	**$37,854**	**$34,023**
Childhood (0–17 years) poverty***	20.1%	20.2%	22.5%	28.9%	20.6%	25.3%	**19.5%**	**25.8%**

* Federal Information Processing Standards coded place of residence (city) as the unit of analysis.
† Per 1,000 live births.
§ As defined by the quartile (25%) of cities with the lowest and highest IMRs. Composition of quartiles differs by racial/ethnic group because quartiles are redefined for each group.
¶ p<0.001 (using Wilcoxon rank sum test of significance).
** p<0.05.
†† p<0.01.
§§ Source: U.S. Census Bureau.
¶¶ Metropolitan Statistical Area dissimilarity index calculated from 1990 U.S. Census data. Source: Reference 4.
*** County estimates of poverty and income for income year 1995. Source: U.S. Census Bureau.

(Continued on page 343)

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending April 13, 2002, with historical data



* Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending April 13, 2002 (15th Week)*

		Cum. 2002	Cum. 2001		Cum. 2002	Cum. 2001
Anthrax		1	-	Encephalitis: West Nile†	5	-
Botulism:	foodborne	6	6	Hansen disease (leprosy)†	23	31
	infant	14	29	Hantavirus pulmonary syndrome†	-	3
	other (wound & unspecified)	7	1	Hemolytic uremic syndrome, postdiarrheal†	26	20
Brucellosis†		21	19	HIV infection, pediatric†§	31	49
Chancroid		20	10	Plague	-	-
Cholera		1	-	Poliomyelitis, paralytic	-	-
Cyclosporiasis†		28	40	Psittacosis†	9	3
Diphtheria		1	-	Q fever†	8	2
Ehrlichiosis:	human granulocytic (HGE)†	18	21	Rabies, human	-	-
	human monocytic (HME)†	7	10	Streptococcal toxic-shock syndrome†	18	30
	other and unspecified	-	-	Tetanus	2	8
Encephalitis:	California serogroup viral†	6	1	Toxic-shock syndrome	36	48
	eastern equine†	-	-	Trichinosis	3	6
	Powassan†	-	-	Tularemia†	6	8
	St. Louis†	-	-	Yellow fever	1	-
	western equine†	-	-			

-:No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).
† Not notifiable in all states.
§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP). Last update February 24, 2002.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15 th Week)*

Reporting Area	AIDS		Chlamydia†		Cryptosporidiosis		*Escherichia coli* O157:H7		*Escherichia coli* Shiga Toxin Positive, Serogroup non-O157	
	Cum. 2002§	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	10,377	10,393	189,426	211,579	534	497	319	308	15	19
NEW ENGLAND	320	309	6,875	6,681	21	12	24	28	2	8
Maine	1	3	403	367	-	-	-	4	-	-
N.H.	9	12	420	369	5	-	1	3	-	2
Vt.	5	10	218	171	5	5	-	1	-	-
Mass.	178	191	2,898	2,709	4	3	14	17	2	1
R.I.	35	33	781	851	4	2	3	-	-	-
Conn.	92	60	2,155	2,214	3	2	6	3	-	5
MID. ATLANTIC	2,133	3,267	18,117	21,739	58	75	28	27	-	-
Upstate N.Y.	158	567	4,062	3,502	17	20	24	15	-	-
N.Y. City	1,299	1,870	8,408	8,530	31	33	-	1	-	-
N.J.	403	473	776	2,980	1	2	4	11	-	-
Pa.	273	357	4,871	6,727	9	20	N	N	-	-
E.N. CENTRAL	973	662	29,549	40,572	143	166	89	72	-	1
Ohio	197	99	4,434	10,457	40	30	15	19	-	1
Ind.	133	64	4,479	4,546	16	14	6	9	-	-
Ill.	476	329	7,971	12,186	15	13	22	12	-	-
Mich.	117	137	9,304	8,535	34	34	21	14	-	-
Wis.	50	33	3,361	4,848	38	75	25	18	-	-
W.N. CENTRAL	147	175	8,749	10,989	45	17	46	29	3	1
Minn.	29	35	2,489	2,405	18	-	19	15	3	-
Iowa	34	18	461	1,040	5	7	10	3	-	-
Mo.	48	72	2,798	3,881	11	6	13	5	-	-
N. Dak.	-	1	228	289	5	-	-	-	-	-
S. Dak.	2	-	584	536	3	1	1	1	-	1
Nebr.	15	25	314	1,052	-	3	-	-	-	-
Kans.	19	24	1,875	1,786	3	-	3	5	-	-
S. ATLANTIC	3,619	2,972	40,151	41,189	118	95	45	36	8	7
Del.	58	54	772	875	1	1	1	-	-	-
Md.	420	245	3,960	4,277	3	18	-	1	-	-
D.C.	157	233	926	1,004	3	3	-	-	-	-
Va.	235	263	4,911	5,119	1	5	7	6	-	1
W. Va.	21	17	662	660	1	-	-	1	-	-
N.C.	280	116	5,895	6,177	15	11	8	16	-	-
S.C.	267	214	3,513	4,858	2	1	-	1	-	-
Ga.	651	270	8,863	8,873	62	38	22	5	5	5
Fla.	1,530	1,560	10,649	9,346	30	18	7	6	3	1
E.S. CENTRAL	425	482	14,741	14,207	29	12	9	12	-	-
Ky.	46	74	2,565	2,457	1	1	2	1	-	-
Tenn.	204	160	4,472	4,270	13	2	5	6	-	-
Ala.	85	118	4,818	3,830	13	4	1	4	-	-
Miss.	90	130	2,886	3,650	2	5	1	1	-	-
W.S. CENTRAL	1,077	815	29,627	30,724	5	12	-	28	-	-
Ark.	59	64	1,365	2,358	2	2	-	-	-	-
La.	269	257	5,183	4,936	1	4	-	-	-	-
Okla.	48	44	2,944	2,878	2	2	-	6	-	-
Tex.	701	450	20,135	20,552	-	4	-	22	-	-
MOUNTAIN	328	345	10,891	11,674	31	36	28	28	1	-
Mont.	4	3	643	473	1	3	4	3	-	-
Idaho	6	5	667	537	10	5	1	5	-	-
Wyo.	2	-	248	231	1	-	-	-	1	-
Colo.	64	82	1,137	3,407	8	12	4	11	-	-
N. Mex.	11	30	1,989	1,642	3	8	2	1	-	-
Ariz.	148	123	3,124	3,616	4	1	4	5	-	-
Utah	18	34	1,503	279	2	7	7	2	-	-
Nev.	75	68	1,580	1,489	2	-	6	1	-	-
PACIFIC	1,355	1,366	30,726	33,804	84	72	50	48	1	2
Wash.	147	150	3,891	4,000	15	U	7	9	-	-
Oreg.	129	52	1,887	2,111	11	8	17	4	1	2
Calif.	1,064	1,144	22,891	25,751	57	64	23	31	-	-
Alaska	2	8	1,013	737	-	-	-	-	-	-
Hawaii	13	12	1,044	1,205	1	-	3	4	-	-
Guam	1	6	-	-	-	-	N	N	-	-
P.R.	273	326	168	808	-	-	-	-	-	-
V.I.	53	1	-	53	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	2	U	37	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

† Chlamydia refers to genital infections caused by *C. trachomatis*.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update March 31, 2002.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	*Escherichia coli* Shiga Toxin Positive, Not Serogrouped		Giardiasis	Gonorrhea		*Haemophilus influenzae*, Invasive			
						All Ages, All Serotypes		Age <5 Years Serotype B	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	2	3	3,433	82,793	96,815	477	493	3	7
NEW ENGLAND	-	-	378	2,079	1,781	34	18	-	1
Maine	-	-	44	22	43	1	1	-	-
N.H.	-	-	16	34	38	4	-	-	-
Vt.	-	-	29	29	26	3	-	-	-
Mass.	-	-	162	976	805	18	15	-	1
R.I.	-	-	34	266	212	-	-	-	-
Conn.	-	-	93	752	657	8	2	-	-
MID. ATLANTIC	-	-	729	8,155	10,334	81	75	1	-
Upstate N.Y.	-	-	275	2,247	2,097	43	15	1	-
N.Y. City	-	-	314	3,421	3,605	24	21	-	-
N.J.	-	-	-	560	1,360	9	33	-	-
Pa.	-	-	140	1,927	3,272	5	6	-	-
E.N. CENTRAL	1	2	646	14,120	20,533	65	79	1	1
Ohio	1	2	243	2,455	5,571	38	26	-	1
Ind.	-	-	-	2,035	1,915	16	13	-	-
Ill.	-	-	94	4,501	6,395	-	29	-	-
Mich.	-	-	218	4,093	4,950	6	4	1	-
Wis.	-	-	91	1,036	1,702	5	7	-	-
W.N. CENTRAL	-	-	392	3,881	4,546	16	16	-	-
Minn.	-	-	163	767	746	12	8	-	-
Iowa	-	-	62	134	323	1	-	-	-
Mo.	-	-	110	2,017	2,239	2	8	-	-
N. Dak.	-	-	3	12	10	-	-	-	-
S. Dak.	-	-	18	72	59	-	-	-	-
Nebr.	-	-	-	118	389	-	-	-	-
Kans.	-	-	36	761	780	1	-	-	-
S. ATLANTIC	-	-	633	23,731	25,334	131	154	-	1
Del.	-	-	12	489	453	-	-	-	-
Md.	-	-	29	2,203	2,457	33	36	-	-
D.C.	-	-	12	792	900	-	-	-	-
Va.	-	-	47	3,005	2,629	8	9	-	-
W. Va.	-	-	9	276	141	2	4	-	1
N.C.	-	-	-	4,599	4,982	11	20	-	-
S.C.	-	-	7	2,061	3,674	3	2	-	-
Ga.	-	-	230	4,676	4,844	48	42	-	-
Fla.	-	-	287	5,630	5,254	26	41	-	-
E.S. CENTRAL	-	1	86	8,323	8,159	19	24	1	-
Ky.	-	1	-	993	952	2	1	-	-
Tenn.	-	-	37	2,456	2,813	11	10	-	-
Ala.	-	-	49	3,089	3,154	5	12	1	-
Miss.	-	-	-	1,785	2,240	1	1	-	-
W.S. CENTRAL	-	-	14	13,247	14,814	21	12	-	1
Ark.	-	-	14	873	1,525	1	-	-	-
La.	-	-	-	3,323	3,352	1	2	-	-
Okla.	-	-	-	1,265	1,360	19	9	-	-
Tex.	-	-	-	7,786	8,577	-	1	-	1
MOUNTAIN	1	-	310	2,598	2,833	58	71	-	2
Mont.	-	-	17	36	27	-	-	-	-
Idaho	-	-	10	28	26	1	1	-	-
Wyo.	-	-	2	20	17	1	-	-	-
Colo.	1	-	114	766	953	14	15	-	-
N. Mex.	-	-	34	368	275	13	10	-	-
Ariz.	-	-	47	782	959	19	37	-	1
Utah	-	-	52	117	26	8	1	-	-
Nev.	-	-	34	481	550	2	7	-	1
PACIFIC	-	-	245	6,659	7,481	52	44	-	1
Wash.	-	-	70	883	896	-	1	-	-
Oreg.	-	-	118	253	362	28	5	-	-
Calif.	-	-	-	5,203	5,941	9	25	-	1
Alaska	-	-	22	181	93	1	1	-	-
Hawaii	-	-	35	139	189	14	12	-	-
Guam	-	-	-	-	-	-	-	-	-
P.R.	-	-	-	31	202	-	-	-	-
V.I.	-	-	-	-	6	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	3	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	*Haemophilus influenzae*, Invasive, Age <5 Years, Non-Serotype B, Cum. 2002	*Haemophilus influenzae*, Invasive, Age <5 Years, Non-Serotype B, Cum. 2001	*Haemophilus influenzae*, Invasive, Age <5 Years, Unknown Serotype, Cum. 2002	*Haemophilus influenzae*, Invasive, Age <5 Years, Unknown Serotype, Cum. 2001	Hepatitis (Viral, Acute), By Type, A, Cum. 2002	Hepatitis (Viral, Acute), By Type, A, Cum. 2001	Hepatitis (Viral, Acute), By Type, B, Cum. 2002	Hepatitis (Viral, Acute), By Type, B, Cum. 2001	Hepatitis (Viral, Acute), By Type, C; Non-A, Non-B, Cum. 2002	Hepatitis (Viral, Acute), By Type, C; Non-A, Non-B, Cum. 2001
UNITED STATES	85	89	4	9	2,446	3,445	1,650	2,007	441	1,414
NEW ENGLAND	5	5	-	-	102	121	53	34	7	20
Maine	-	-	-	-	4	1	1	2	-	-
N.H.	-	-	-	-	6	4	5	5	-	-
Vt.	-	-	-	-	-	2	2	1	4	5
Mass.	3	4	-	-	51	41	32	5	3	15
R.I.	-	-	-	-	5	5	1	6	-	-
Conn.	2	1	-	-	36	68	12	15	-	-
MID. ATLANTIC	12	13	-	-	300	395	370	437	119	655
Upstate N.Y.	7	1	-	-	53	62	36	34	15	10
N.Y. City	4	4	-	-	138	114	214	185	-	-
N.J.	1	4	-	-	36	165	59	137	101	624
Pa.	-	4	-	-	73	54	61	81	3	21
E.N. CENTRAL	11	16	-	-	302	731	240	185	30	81
Ohio	5	3	-	-	99	79	30	34	4	4
Ind.	5	4	-	-	17	26	6	5	-	-
Ill.	-	7	-	-	83	492	20	14	3	20
Mich.	-	-	-	-	72	107	184	132	23	57
Wis.	1	2	-	-	31	27	-	-	-	-
W.N. CENTRAL	1	1	2	2	104	135	55	62	137	382
Minn.	1	1	1	-	14	8	2	5	-	-
Iowa	-	-	-	-	27	12	6	6	1	-
Mo.	-	-	1	2	22	41	39	37	136	379
N. Dak.	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	3	1	-	1	-	-
Nebr.	-	-	-	-	-	17	-	5	-	1
Kans.	-	-	-	-	38	56	8	8	-	2
S. ATLANTIC	21	26	-	4	771	593	458	466	38	32
Del.	-	-	-	-	2	3	1	5	3	1
Md.	1	3	-	-	92	68	37	42	6	8
D.C.	-	-	-	-	30	14	8	3	-	-
Va.	2	4	-	-	28	42	60	41	-	-
W. Va.	-	-	-	-	9	2	9	6	-	3
N.C.	1	1	-	4	96	34	46	79	6	7
S.C.	1	-	-	-	15	17	19	1	3	2
Ga.	10	11	-	-	189	255	174	189	4	1
Fla.	6	7	-	-	310	158	104	100	16	10
E.S. CENTRAL	4	4	-	1	48	84	48	116	53	27
Ky.	-	-	-	-	22	11	11	18	1	3
Tenn.	2	1	-	-	-	38	-	40	14	19
Ala.	2	2	-	1	8	30	19	29	2	1
Miss.	-	1	-	-	18	5	18	29	36	4
W.S. CENTRAL	4	1	-	-	30	581	95	221	3	163
Ark.	-	-	-	-	11	17	26	25	-	3
La.	-	-	-	-	6	32	6	30	3	77
Okla.	4	1	-	-	12	53	1	26	-	2
Tex.	-	-	-	-	1	479	62	140	-	81
MOUNTAIN	15	8	1	1	175	232	109	150	22	20
Mont.	-	-	-	-	5	4	2	1	-	-
Idaho	-	-	-	-	-	25	-	4	-	1
Wyo.	-	-	-	-	3	1	6	-	4	3
Colo.	2	-	-	-	30	24	30	32	13	4
N. Mex.	4	4	-	1	4	7	11	36	-	8
Ariz.	5	4	-	-	91	118	40	57	-	1
Utah	3	-	-	-	19	20	10	6	-	-
Nev.	1	-	1	-	23	33	10	14	5	3
PACIFIC	12	15	1	1	614	573	222	336	32	34
Wash.	-	-	-	1	47	22	14	27	3	9
Oreg.	4	-	-	-	35	14	40	12	7	2
Calif.	6	14	1	-	526	521	164	286	22	23
Alaska	1	-	-	-	6	10	2	3	-	-
Hawaii	1	1	-	-	-	6	2	8	-	-
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	25	31	14	57	-	1
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	4	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	Legionellosis		Listeriosis		Lyme Disease		Malaria		Measles Total	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	169	246	97	119	1,090	1,214	262	317	4†	43§
NEW ENGLAND	6	8	10	11	46	188	13	25	-	5
Maine	1	-	2	-	-	-	1	1	-	-
N.H.	1	2	2	-	14	2	4	1	-	-
Vt.	-	3	-	-	1	1	-	-	-	1
Mass.	2	2	4	6	28	71	3	11	-	3
R.I.	-	-	-	-	3	-	-	-	-	-
Conn.	2	1	2	5	-	114	5	12	-	1
MID. ATLANTIC	34	56	16	21	879	806	59	80	-	7
Upstate N.Y.	11	11	9	3	647	208	12	10	-	4
N.Y. City	9	4	3	4	43	11	36	41	-	1
N.J.	1	9	-	10	32	146	6	20	-	1
Pa.	13	32	4	4	157	441	5	9	-	1
E.N. CENTRAL	55	71	16	13	9	37	29	47	-	7
Ohio	31	31	9	1	8	7	7	5	-	2
Ind.	3	5	1	1	1	-	1	8	-	2
Ill.	-	9	-	4	-	4	4	14	-	3
Mich.	16	15	4	5	-	-	13	13	-	-
Wis.	5	11	2	2	U	26	4	7	-	-
W.N. CENTRAL	10	14	4	2	14	19	17	8	-	3
Minn.	1	1	-	-	8	13	8	1	-	1
Iowa	1	4	1	-	3	1	2	1	-	-
Mo.	7	6	1	1	3	4	4	3	-	2
N. Dak.	-	-	1	-	-	-	-	-	-	-
S. Dak.	1	-	-	-	-	-	-	-	-	-
Nebr.	-	2	-	-	-	-	-	1	-	-
Kans.	-	1	1	1	-	1	3	2	-	-
S. ATLANTIC	33	28	13	16	103	116	83	79	1	4
Del.	3	-	-	-	5	12	1	1	-	-
Md.	4	7	3	2	57	87	21	27	-	3
D.C.	-	1	-	-	6	6	2	4	-	-
Va.	2	4	1	2	2	7	6	12	-	-
W. Va.	N	N	-	1	-	1	-	-	-	-
N.C.	3	2	1	-	12	2	7	1	-	-
S.C.	3	-	2	-	1	-	2	2	-	-
Ga.	3	3	3	4	-	-	33	20	-	1
Fla.	15	11	3	7	20	1	11	12	1	-
E.S. CENTRAL	5	20	6	7	5	2	4	8	-	-
Ky.	3	6	1	1	2	2	1	2	-	-
Tenn.	-	7	2	3	1	-	1	3	-	-
Ala.	2	3	3	3	2	-	1	3	-	-
Miss.	-	4	-	-	-	-	1	-	-	-
W.S. CENTRAL	1	5	3	12	2	26	2	3	-	1
Ark.	-	-	-	1	-	-	-	-	-	-
La.	-	2	-	-	1	2	2	1	-	-
Okla.	1	1	3	-	-	-	-	1	-	-
Tex.	-	2	-	11	1	24	-	1	-	1
MOUNTAIN	13	14	8	7	6	1	10	18	-	1
Mont.	1	-	-	-	-	-	-	2	-	-
Idaho	-	-	-	-	1	-	-	1	-	1
Wyo.	3	1	-	-	-	-	-	-	-	-
Colo.	4	4	2	1	2	-	5	9	-	-
N. Mex.	1	1	-	2	1	-	-	1	-	-
Ariz.	-	6	4	1	1	-	2	1	-	-
Utah	4	-	2	1	1	-	2	2	-	-
Nev.	-	2	-	2	-	1	1	2	-	-
PACIFIC	12	30	21	30	26	19	45	49	3	15
Wash.	1	5	1	2	-	1	3	1	-	-
Oreg.	N	N	2	3	1	2	1	2	-	3
Calif.	11	21	18	25	25	16	38	42	3	10
Alaska	-	1	-	-	-	-	1	1	-	-
Hawaii	-	3	-	-	N	N	2	3	-	2
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	2	-	-	N	N	-	1	-	-
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).
† Of four cases reported, three were indigenous and one was imported from another country.
§ Of 43 cases reported, 18 were indigenous and 25 were imported from another country.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	Meningococcal Disease		Mumps		Pertussis		Rabies, Animal	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	503	1,014	83	49	1,287	1,532	1,167	1,658
NEW ENGLAND	38	55	4	-	202	168	203	144
Maine	2	-	-	-	3	-	12	20
N.H.	4	4	3	-	2	16	2	4
Vt.	3	4	-	-	32	22	44	26
Mass.	20	33	1	-	161	124	73	40
R.I.	2	1	-	-	-	-	4	16
Conn.	7	13	-	-	4	6	68	38
MID. ATLANTIC	50	118	10	3	93	120	186	100
Upstate N.Y.	21	30	2	1	66	69	140	-
N.Y. City	7	19	1	2	5	12	7	3
N.J.	6	42	1	-	-	2	-	33
Pa.	16	27	6	-	22	37	39	64
E.N. CENTRAL	67	122	11	6	206	170	4	11
Ohio	32	38	3	1	123	111	1	-
Ind.	12	5	-	-	15	5	1	1
Ill.	-	33	3	5	33	15	1	-
Mich.	15	28	5	-	22	17	1	6
Wis.	8	18	-	-	13	22	-	4
W.N. CENTRAL	46	59	6	2	163	55	87	93
Minn.	10	6	-	-	59	-	7	15
Iowa	6	13	-	-	48	8	10	15
Mo.	24	25	3	-	35	34	5	6
N. Dak.	-	2	-	-	-	-	1	14
S. Dak.	2	2	-	-	5	2	20	13
Nebr.	-	3	-	-	-	1	-	-
Kans.	4	8	3	2	16	10	44	30
S. ATLANTIC	96	168	13	5	107	72	511	561
Del.	4	-	-	-	1	-	3	10
Md.	3	21	2	2	13	10	75	88
D.C.	-	-	-	-	-	1	-	-
Va.	15	18	2	2	35	8	144	104
W. Va.	-	4	-	-	3	1	43	40
N.C.	11	39	1	-	13	23	165	154
S.C.	11	13	2	1	22	8	20	27
Ga.	14	28	2	-	11	14	59	85
Fla.	38	45	4	-	9	7	2	53
E.S. CENTRAL	23	62	5	-	39	31	35	115
Ky.	4	10	2	-	11	9	7	5
Tenn.	8	22	1	-	23	14	22	106
Ala.	9	23	1	-	5	5	6	4
Miss.	2	7	1	-	-	3	-	-
W.S. CENTRAL	19	213	4	7	122	73	27	452
Ark.	7	9	-	1	5	4	-	-
La.	4	41	-	2	-	1	-	2
Okla.	7	14	-	-	12	2	27	23
Tex.	1	149	4	4	105	66	-	427
MOUNTAIN	42	45	3	4	183	620	50	67
Mont.	1	-	-	-	2	5	4	7
Idaho	2	3	1	-	22	153	-	-
Wyo.	-	-	-	1	3	-	1	16
Colo.	14	17	-	1	100	134	-	-
N. Mex.	1	7	-	2	22	39	-	1
Ariz.	12	9	-	-	19	275	45	43
Utah	4	5	2	-	11	9	-	-
Nev.	8	4	-	-	4	5	-	-
PACIFIC	122	172	27	22	172	223	64	115
Wash.	22	29	-	-	101	29	-	-
Oreg.	17	8	N	N	15	6	-	-
Calif.	79	127	22	12	50	179	41	81
Alaska	1	1	-	1	3	-	23	34
Hawaii	3	7	5	9	3	9	-	-
Guam	-	-	-	-	-	-	-	-
P.R.	2	2	-	-	-	2	18	32
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	Rocky Mountain Spotted Fever		Rubella				Salmonellosis	
			Rubella		Congenital Rubella			
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	82	24	1	5	-	-	6,396	7,122
NEW ENGLAND	-	-	-	-	-	-	373	497
Maine	-	-	-	-	-	-	46	38
N.H.	-	-	-	-	-	-	15	34
Vt.	-	-	-	-	-	-	16	20
Mass.	-	-	-	-	-	-	203	302
R.I.	-	-	-	-	-	-	13	23
Conn.	-	-	-	-	-	-	80	80
MID. ATLANTIC	7	1	-	3	-	-	776	1,106
Upstate N.Y.	2	-	-	1	-	-	245	187
N.Y. City	-	-	-	2	-	-	293	240
N.J.	-	-	-	-	-	-	76	413
Pa.	5	1	-	-	-	-	162	266
E.N. CENTRAL	3	2	-	1	-	-	1,073	996
Ohio	3	-	-	-	-	-	331	328
Ind.	-	1	-	-	-	-	73	63
Ill.	-	1	-	1	-	-	322	272
Mich.	-	-	-	-	-	-	219	168
Wis.	-	-	-	-	-	-	128	165
W.N. CENTRAL	9	5	-	-	-	-	473	410
Minn.	-	-	-	-	-	-	98	132
Iowa	-	-	-	-	-	-	72	60
Mo.	9	5	-	-	-	-	217	104
N. Dak.	-	-	-	-	-	-	5	1
S. Dak.	-	-	-	-	-	-	21	24
Nebr.	-	-	-	-	-	-	-	34
Kans.	-	-	-	-	-	-	60	55
S. ATLANTIC	55	12	1	-	-	-	1,757	1,611
Del.	-	-	-	-	-	-	11	21
Md.	6	2	1	-	-	-	152	150
D.C.	-	-	-	-	-	-	22	18
Va.	1	-	-	-	-	-	174	181
W. Va.	-	-	-	-	-	-	18	10
N.C.	32	7	-	-	-	-	243	258
S.C.	6	1	-	-	-	-	78	181
Ga.	9	-	-	-	-	-	494	409
Fla.	1	2	-	-	-	-	565	383
E.S. CENTRAL	7	3	-	-	-	-	355	370
Ky.	-	-	-	-	-	-	47	66
Tenn.	5	2	-	-	-	-	116	95
Ala.	2	1	-	-	-	-	117	138
Miss.	-	-	-	-	-	-	75	71
W.S. CENTRAL	-	-	-	-	-	-	136	734
Ark.	-	-	-	-	-	-	49	56
La.	-	-	-	-	-	-	20	157
Okla.	-	-	-	-	-	-	65	33
Tex.	-	-	-	-	-	-	2	488
MOUNTAIN	1	1	-	-	-	-	417	424
Mont.	-	-	-	-	-	-	10	16
Idaho	-	1	-	-	-	-	25	19
Wyo.	-	-	-	-	-	-	11	20
Colo.	-	-	-	-	-	-	122	119
N. Mex.	-	-	-	-	-	-	61	55
Ariz.	-	-	-	-	-	-	100	124
Utah	-	-	-	-	-	-	39	45
Nev.	1	-	-	-	-	-	49	26
PACIFIC	-	-	-	1	-	-	1,036	974
Wash.	-	-	-	-	-	-	54	92
Oreg.	-	-	-	-	-	-	72	31
Calif.	-	-	-	-	-	-	837	757
Alaska	-	-	-	-	-	-	17	11
Hawaii	-	-	-	1	-	-	56	83
Guam	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	-	42	213
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	2	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	Shigellosis		Streptococcal Disease, Invasive, Group A		*Streptococcus pneumoniae*, Drug Resistant, Invasive		*Streptococcus pneumoniae*, Invasive (<5 Years)	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	3,332	3,614	1,236	1,396	845	1,083	56	47
NEW ENGLAND	66	60	51	50	1	5	1	1
Maine	2	1	14	7	-	-	-	-
N.H.	3	1	16	5	-	-	-	-
Vt.	-	1	2	7	1	5	1	-
Mass.	46	43	19	29	-	-	-	-
R.I.	2	2	-	2	-	-	-	1
Conn.	13	12	-	-	-	-	-	-
MID. ATLANTIC	161	456	213	217	36	55	23	40
Upstate N.Y.	40	120	124	83	36	53	23	40
N.Y. City	82	115	50	75	U	U	-	-
N.J.	13	141	22	48	-	-	-	-
Pa.	26	80	17	11	-	2	-	-
E.N. CENTRAL	413	518	179	336	59	71	13	5
Ohio	249	134	76	84	-	-	1	-
Ind.	21	73	9	14	59	71	11	5
Ill.	72	151	1	126	-	-	-	-
Mich.	44	97	93	90	-	-	1	-
Wis.	27	63	-	22	-	-	-	-
W.N. CENTRAL	274	381	88	126	188	18	15	1
Minn.	44	160	48	44	141	-	15	-
Iowa	30	69	-	-	-	-	-	-
Mo.	40	72	22	30	4	5	-	-
N. Dak.	-	9	-	4	-	1	-	1
S. Dak.	119	18	4	5	1	1	-	-
Nebr.	-	23	-	12	-	3	-	-
Kans.	41	30	14	31	42	8	-	-
S. ATLANTIC	1,462	528	253	258	470	756	4	-
Del.	5	3	-	1	3	-	-	-
Md.	170	34	32	20	-	-	-	-
D.C.	18	16	3	-	26	2	1	-
Va.	296	35	30	45	-	-	-	-
W. Va.	2	4	2	8	21	17	-	-
N.C.	94	102	52	42	-	-	-	-
S.C.	17	30	19	2	75	119	3	-
Ga.	588	125	70	94	133	285	-	-
Fla.	272	179	45	46	212	333	-	-
E.S. CENTRAL	265	281	42	31	62	113	-	-
Ky.	46	98	5	14	8	14	-	-
Tenn.	17	27	37	17	54	98	-	-
Ala.	116	67	-	-	-	1	-	-
Miss.	86	89	-	-	-	-	-	-
W.S. CENTRAL	98	677	14	141	11	44	-	-
Ark.	24	155	-	-	2	11	-	-
La.	12	67	-	-	9	33	-	-
Okla.	61	6	13	21	-	-	-	-
Tex.	1	449	1	120	-	-	-	-
MOUNTAIN	119	182	187	161	18	20	-	-
Mont.	-	-	-	-	-	-	-	-
Idaho	2	5	4	2	-	-	-	-
Wyo.	1	-	3	2	7	2	-	-
Colo.	34	38	101	62	-	-	-	-
N. Mex.	17	37	35	30	10	18	-	-
Ariz.	47	79	44	63	1	-	-	-
Utah	10	9	-	2	-	-	-	-
Nev.	8	14	-	-	-	-	-	-
PACIFIC	474	531	209	76	-	1	-	-
Wash.	18	50	26	-	-	-	-	-
Oreg.	30	10	-	-	-	-	-	-
Calif.	408	458	167	57	-	-	-	-
Alaska	2	2	-	-	-	-	-	-
Hawaii	16	11	16	19	-	1	-	-
Guam	-	-	-	-	-	-	-	-
P.R.	1	6	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	U	U
C.N.M.I.	-	U	-	U	-	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
*Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 13, 2002, and April 14, 2001 (15th Week)*

Reporting Area	Syphilis: Primary & Secondary Cum. 2002	Syphilis: Primary & Secondary Cum. 2001	Syphilis: Congenital† Cum. 2002	Syphilis: Congenital† Cum. 2001	Tuberculosis Cum. 2002	Tuberculosis Cum. 2001	Typhoid Fever Cum. 2002	Typhoid Fever Cum. 2001
UNITED STATES	1,583	1,580	18	138	2,037	2,948	68	78
NEW ENGLAND	22	10	-	1	88	104	7	5
Maine	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	4	7	-	-
Vt.	-	-	-	-	-	3	-	-
Mass.	13	6	-	1	44	53	6	4
R.I.	2	1	-	-	11	12	-	-
Conn.	7	3	-	-	29	29	1	1
MID. ATLANTIC	160	123	2	21	402	460	16	32
Upstate N.Y.	9	4	1	13	65	-	3	5
N.Y. City	99	74	-	-	264	264	10	6
N.J.	33	20	1	5	12	124	3	21
Pa.	19	25	-	3	61	72	-	-
E.N. CENTRAL	312	260	-	24	256	277	10	5
Ohio	42	24	-	1	45	60	4	1
Ind.	16	50	-	3	29	23	1	1
Ill.	73	86	-	18	119	137	-	1
Mich.	175	92	-	2	57	39	3	1
Wis.	6	8	-	-	6	18	2	1
W.N. CENTRAL	14	24	-	3	100	111	1	4
Minn.	4	13	-	-	51	55	-	-
Iowa	-	-	-	-	-	9	-	-
Mo.	5	6	-	1	41	30	1	4
N. Dak.	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	5	4	-	-
Nebr.	3	-	-	-	-	13	-	-
Kans.	2	5	-	2	3	-	-	-
S. ATLANTIC	417	589	2	34	388	563	11	10
Del.	6	4	-	-	-	-	-	-
Md.	37	78	-	1	41	48	1	3
D.C.	23	12	-	1	-	22	-	-
Va.	9	41	-	1	27	51	-	1
W. Va.	-	-	-	-	8	9	-	-
N.C.	98	143	-	2	77	76	-	1
S.C.	34	81	-	8	28	52	-	-
Ga.	63	87	-	9	42	118	7	3
Fla.	147	143	2	12	165	187	3	2
E.S. CENTRAL	185	163	1	7	186	205	2	-
Ky.	26	13	-	-	28	20	2	-
Tenn.	74	92	-	4	76	72	-	-
Ala.	64	26	1	2	59	78	-	-
Miss.	21	32	-	1	23	35	-	-
W.S. CENTRAL	214	202	13	24	56	448	-	4
Ark.	6	15	-	2	19	38	-	-
La.	41	41	-	-	-	-	-	-
Okla.	21	23	-	1	37	19	-	-
Tex.	146	123	13	21	-	391	-	4
MOUNTAIN	66	55	-	6	68	111	6	2
Mont.	-	-	-	-	-	-	-	1
Idaho	1	-	-	-	-	3	-	-
Wyo.	-	-	-	-	1	-	-	-
Colo.	-	6	-	-	15	27	2	-
N. Mex.	13	4	-	-	7	14	-	-
Ariz.	46	37	-	6	38	41	-	-
Utah	5	6	-	-	5	5	3	-
Nev.	1	2	-	-	2	21	1	1
PACIFIC	193	154	-	18	493	669	15	16
Wash.	18	19	-	-	61	57	-	1
Oreg.	4	3	-	-	19	25	2	1
Calif.	170	129	-	18	360	533	13	13
Alaska	-	-	-	-	19	14	-	-
Hawaii	1	3	-	-	34	40	-	1
Guam	-	-	-	-	-	-	-	-
P.R.	9	113	-	5	8	23	-	-
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	2	U	-	U	11	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).
† Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE III. Deaths in 122 U.S. cities,* week ending April 13, 2002 (15th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	359	251	76	18	6	8	29
Boston, Mass.	U	U	U	U	U	U	U
Bridgeport, Conn.	U	U	U	U	U	U	U
Cambridge, Mass.	16	11	4	1	-	-	-
Fall River, Mass.	27	18	8	1	-	-	3
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	27	21	5	1	-	-	2
Lynn, Mass.	14	10	3	1	-	-	-
New Bedford, Mass.	22	18	3	1	-	-	4
New Haven, Conn.	36	19	10	4	2	1	4
Providence, R.I.	69	46	17	3	1	2	4
Somerville, Mass.	5	1	3	1	-	-	-
Springfield, Mass.	41	28	8	3	-	2	3
Waterbury, Conn.	32	26	4	1	1	-	2
Worcester, Mass.	70	53	11	1	2	3	7
MID. ATLANTIC	2,352	1,632	482	163	40	35	143
Albany, N.Y.	51	36	12	3	-	-	3
Allentown, Pa.	23	21	1	1	-	-	1
Buffalo, N.Y.	101	72	19	5	1	4	14
Camden, N.J.	24	15	4	1	2	2	2
Elizabeth, N.J.	29	16	7	5	-	1	-
Erie, Pa.	42	33	7	1	1	-	3
Jersey City, N.J.	58	39	13	6	-	-	-
New York City, N.Y.	1,144	793	239	81	15	16	45
Newark, N.J.	77	37	29	6	4	1	4
Paterson, N.J.	34	18	5	8	2	1	5
Philadelphia, Pa.	349	220	81	35	8	5	24
Pittsburgh, Pa.§	54	40	11	2	-	1	5
Reading, Pa.	25	19	4	1	1	-	1
Rochester, N.Y.	125	99	21	2	1	2	11
Schenectady, N.Y.	27	23	2	-	2	-	6
Scranton, Pa.	35	33	1	1	-	-	2
Syracuse, N.Y.	119	88	23	5	2	1	16
Trenton, N.J.	15	12	2	-	-	1	-
Utica, N.Y.	20	18	1	-	1	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,730	1,191	345	100	49	45	164
Akron, Ohio	U	U	U	U	U	U	U
Canton, Ohio	40	34	5	-	1	-	3
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	108	87	13	1	1	6	12
Cleveland, Ohio	123	77	31	7	6	2	7
Columbus, Ohio	231	161	40	19	3	8	24
Dayton, Ohio	130	96	21	6	2	5	16
Detroit, Mich.	204	112	57	22	8	5	26
Evansville, Ind.	68	54	8	5	1	-	3
Fort Wayne, Ind.	78	59	15	3	1	-	7
Gary, Ind.	19	8	7	1	1	2	1
Grand Rapids, Mich.	77	55	14	4	2	2	16
Indianapolis, Ind.	206	129	46	11	12	8	14
Lansing, Mich.	67	44	17	3	2	1	5
Milwaukee, Wis.	105	74	21	7	1	2	8
Peoria, Ill.	48	39	9	-	-	-	4
Rockford, Ill.	75	50	15	4	4	2	6
South Bend, Ind.	58	42	8	4	2	2	3
Toledo, Ohio	93	70	18	3	2	-	9
Youngstown, Ohio	U	U	U	U	U	U	U
W.N. CENTRAL	841	575	156	62	24	24	63
Des Moines, Iowa	65	47	10	2	3	3	12
Duluth, Minn.	27	23	3	-	-	1	6
Kansas City, Kans.	58	37	15	3	2	1	-
Kansas City, Mo.	89	57	18	11	1	2	6
Lincoln, Nebr.	48	36	6	4	1	1	-
Minneapolis, Minn.	82	49	17	8	5	3	5
Omaha, Nebr.	89	62	16	7	1	3	5
St. Louis, Mo.	130	87	24	13	4	2	3
St. Paul, Minn.	73	59	11	3	-	-	14
Wichita, Kans.	180	118	36	11	7	8	12
S. ATLANTIC	1,277	828	281	108	24	34	89
Atlanta, Ga.	137	72	39	13	2	11	10
Baltimore, Md.	198	118	44	27	6	3	17
Charlotte, N.C.	131	90	27	10	1	3	13
Jacksonville, Fla.	119	79	27	9	2	2	7
Miami, Fla.	103	66	22	13	2	-	4
Norfolk, Va.	54	40	7	-	4	3	2
Richmond, Va.	58	31	15	7	2	1	4
Savannah, Ga.	60	48	8	1	1	2	4
St. Petersburg, Fla.	95	78	10	5	1	1	7
Tampa, Fla.	214	147	42	16	2	7	19
Washington, D.C.	100	59	32	7	1	1	2
Wilmington, Del.	8	-	8	-	-	-	-
E.S. CENTRAL	890	597	181	68	24	18	69
Birmingham, Ala.	190	125	37	14	6	6	19
Chattanooga, Tenn.	76	49	15	6	5	1	9
Knoxville, Tenn.	116	85	22	6	3	-	5
Lexington, Ky.	62	46	9	2	4	1	4
Memphis, Tenn.	174	112	38	16	3	5	9
Mobile, Ala.	91	57	19	13	1	1	7
Montgomery, Ala.	42	30	7	2	1	2	3
Nashville, Tenn.	139	93	34	9	1	2	13
W.S. CENTRAL	1,533	1,002	330	119	53	29	100
Austin, Tex.	89	60	16	7	5	1	8
Baton Rouge, La.	45	32	9	4	-	-	-
Corpus Christi, Tex.	65	43	17	3	2	-	4
Dallas, Tex.	222	133	61	20	5	3	14
El Paso, Tex.	82	57	16	3	5	1	3
Ft. Worth, Tex.	126	74	36	9	3	4	13
Houston, Tex.	309	178	68	41	14	8	17
Little Rock, Ark.	62	35	15	4	4	4	-
New Orleans, La.	50	35	8	4	3	-	-
San Antonio, Tex.	228	164	39	14	7	4	17
Shreveport, La.	139	101	26	4	5	3	14
Tulsa, Okla.	116	90	19	6	-	1	10
MOUNTAIN	1,012	703	191	68	25	24	90
Albuquerque, N.M.	139	95	25	14	2	3	16
Boise, Idaho	61	43	9	3	2	4	3
Colo. Springs, Colo.	68	48	13	5	-	2	2
Denver, Colo.	126	75	32	7	6	5	15
Las Vegas, Nev.	228	164	45	12	6	1	20
Ogden, Utah	41	32	5	2	-	2	5
Phoenix, Ariz.	U	U	U	U	U	U	U
Pueblo, Colo.	33	22	8	1	2	-	3
Salt Lake City, Utah	125	80	21	15	4	5	15
Tucson, Ariz.	191	144	33	9	3	2	11
PACIFIC	1,667	1,173	334	87	44	28	145
Berkeley, Calif.	19	11	6	1	1	-	1
Fresno, Calif.	84	63	13	5	3	-	6
Glendale, Calif.	19	14	4	-	1	-	-
Honolulu, Hawaii	69	45	17	2	-	5	5
Long Beach, Calif.	83	53	20	6	2	1	15
Los Angeles, Calif.	340	225	71	27	10	7	3
Pasadena, Calif.	38	31	4	1	1	1	7
Portland, Oreg.	126	84	35	3	2	2	8
Sacramento, Calif.	213	159	33	15	6	-	32
San Diego, Calif.	173	128	32	8	3	2	17
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	207	151	35	12	7	2	21
Santa Cruz, Calif.	20	12	5	-	3	-	4
Seattle, Wash.	119	81	24	4	3	7	14
Spokane, Wash.	81	66	13	1	-	1	6
Tacoma, Wash.	76	50	22	2	2	-	6
TOTAL	11,661¶	7,952	2,376	793	289	245	892

U: Unavailable. -:No reported cases.

* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Total includes unknown ages.

(Continued from page 332)

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Notice to Readers

CDC's Campaign to Prevent Antimicrobial Resistance in Health-Care Settings

Each year, approximately 2 million U.S. patients acquire an infection while hospitalized; approximately 90,000 of these infections are fatal. Many more infections are acquired in nursing homes and other health-care facilities in which vulnerable patients receive care. Guidelines for preventing antimicrobial-resistant infections in health-care settings exist; however, these guidelines often are not read by clinicians and adherence is not optimal. Most data indicate that guidelines alone are not effective in preventing antimicrobial resistance. New approaches are needed to help clinicians who treat patients with infections translate these guidelines into routine practice behaviors that will prevent antimicrobial resistance.

In response to this issue, CDC has initiated the "Campaign to Prevent Antimicrobial Resistance." The campaign focuses on four integrated strategies: preventing infection, diagnosing and treating infection effectively, using antimicrobials wisely, and preventing transmission. The campaign is designed to highlight the importance of antimicrobial resistance and engage clinicians, health-care facilities, and patients in efforts to prevent resistance and promote safer care.

The first major new tool is the "12 Steps to Prevent Antimicrobial Resistance: Hospitalized Adults." These steps were derived by translating existing evidence-based guidelines and recommendations into action steps that will help change practices and prevent resistance. The 12 Steps will be marketed through slide sets, web presentations, posters, pocket cards, and other media. Plans are in progress to create similar tools that target other patient groups and their clinicians, including pediatricians, surgeons, critical-care specialists, geriatricians, emergency physicians, obstetricians, and family practitioners.

The campaign provides clinicians with information about the problem of antimicrobial resistance and tools to support needed practice changes. Targeting clinicians at the front end of care through this campaign is an important step toward preventing the morbidity, mortality, and costs associated with drug resistance. The campaign was developed in collaboration with the CDC Foundation and several private- and public-sector partners. Additional information about the campaign is available at http://www.cdc.gov/drugresistance/healthcare.

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